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Morphological and Functional Musculoskeletal Imaging

Hypothesis: High resolution, fast magnetic resonance imaging (MRI) techniques and positron emission tomography (PET), combined with quantitative image analysis, processing and visualization can provide new insights and methods for objective evaluation of musculo-skeletal system.

- **Development of High Res CT, MR for assessing spinal stenosis**
  - **Image registration, segmentation, analysis**
  - **Diffusion Imaging in the spine**
  - **Quantifying disk changes in humans**
  - **Animal models of disc degeneration, bone changes**
- **Development of MR, radiolabelled tracers for osteo-arthritis**
  - **Human studies - cartilage, bone**
  - **Specimen studies- Diffraction enhanced imaging, FTIR, histology**
  - **Animal studies of Iodine labelled TNFα**